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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,124	12/01/2003	Thomas F. Bailey	WEAT/0173.C1	2618

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EXAMINER

BOMAR, THOMAS S

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/725,124

Applicant(s)

BAILEY ET AL.

Examiner

Shane Bomar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/1/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the at least one sensor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: in line 6 of paragraph [0017], the recitation of "conducive" should most likely be --conductive--.

Appropriate correction is required.

Claim Objections

3. Claims 42 and 44 are objected to because of the following informalities: the recitation of "the wellbore" lacks antecedent basis in both of these claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 21, 27, 29, 30, 31, 37, and 39-45 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 4,899,834 to Weldon.

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Regarding claims 21 and 31, Weldon discloses a method for controlling drilling of a wellbore, comprising: running an electrical transmitting tubular string 16 into the wellbore (see Fig. 1 and col. 5, lines 25-33), the string having a tool 18 that changes shape disposed therein (see Figs. 5-8 and col. 9, line 5 through col. 10, line 8) and an automated downhole device 22 disposed between a drill bit 23 and the tool that changes shape (see Figs. 1 and 10, and col. 3, lines 22-44); and actuating the downhole device through communications with the downhole device via the string and an electrical transmission path across the tool (see col. 11, lines 13-28).

Regarding claims 27 and 37, the downhole device is a drilling hammer and actuating the hammer is by an electrical transmission from a surface of a well (see col. 11, lines 13-28 and col. 12, lines 45-51).

Regarding claims 29 and 39, the downhole device is a rotatable steering apparatus and actuating the apparatus is by an electrical transmission from a surface of a well (see col. 12, lines 33-51 and col. 3, lines 45-62).

Regarding claims 30 and 40, the downhole device is a vibrator and actuating the vibrator is by an electrical transmission from a surface of a well (see col. 4, lines 1-7).

Regarding claim 41, Weldon discloses an inherent method of operating a jarring tool that comprises lowering the inherent jarring tool in a wellbore disposed on a string 16 comprising a signal transmitting tubular 16'; and sending an electrical signal from a surface of the wellbore to the jarring tool to actuate the jarring tool, the electrical signal traveling through the signal transmitting tubular (see Figs. 10 and 11 and the associated description wherein the sudden downward movement of plate 82 imparts a jarring action to the bit).

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Regarding claims 42-45, Weldon discloses the methods and apparatus of operating a drilling hammer and vibrator wherein the two devices are operated by an electrical transmission from a surface of a well via an electrical transmitting tubular (see col. 3, lines 14-27, and col. 3, line 63 through col. 4, line 7).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22-25 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of US patent 4,416,494 to Watkins et al.

Regarding claims 22 and 32, Weldon teaches the method and apparatus for controlling drilling of a wellbore from claims 21 and 31 above, wherein a shape changing tool and a drill bit is included. It is not expressly taught that at least one sensor is located adjacent to the bit.

Watkins et al teach a method and apparatus for controlling drilling similar to that of Weldon. It is further taught that at least one sensor is located adjacent the bit (see Fig. 1 and col. 5, lines 36-41). It would have been obvious to one of ordinary skill in the art, having the teachings of Weldon and Watkins et al before him at the time the invention was made, to modify the drill string taught by Weldon to include the sensor instrument of Watkins et al, in order to obtain measurements of subsurface conditions or parameters. One would have been motivated to make such a combination since Watkins et al has shown that it was notoriously known in the

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drilling art to sense downhole parameters adjacent the bit and transmitting the data uphole via electrical power, and since Weldon has shown that data obtained from a sensor can be sent uphole through the electrical transmitting tubular (see col. 9, lines 46-53 of Weldon).

Regarding claims 23-25 and 33-35, the combination applied to claims 22 and 32 above teach sensors that measure temperature, pressure, and chemical characteristics of a fluid around the bit (see col. 5, lines 41-48 of Watkins et al).

8. Claims 26, 28, 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon in view of US patent 6,296,066 to Terry et al.

Weldon teaches the method and apparatus for controlling drilling of a wellbore from claims 21 and 31 above, wherein a downhole device is included. It is not expressly taught that the device is a thruster or a stabilizer.

Terry et al teach a method and apparatus for controlling drilling similar to that of Weldon. It is further taught that a downhole device for the controlled drilling can be a thruster or a stabilizer (see col. 15, lines 20-25 and col. 17, lines 13-30). It would have been obvious to one of ordinary skill in the art, having the teachings of Weldon and Terry et al before him at the time the invention was made, to modify the method and apparatus taught by Weldon to include the downhole thruster or stabilizer of Terry et al, in order to obtain a drill string that can be propelled and steered in any direction more effectively. One would have been motivated to make such a combination since Terry et al have shown that it was notoriously known in the art of drilling control to use stabilizers and thrusters as downhole device for such control.

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Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dismukes teaches a thruster with electrical transmission through the string; Garcia, Hall et al, Lee, Payne et al, and Shirk teach various other types of electrical downhole transmission through the drill string.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 703-305-4849. The examiner can normally be reached on Monday - Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David J. Bagnell
Supervisory Patent Examiner
Art Unit 3672

tsb

June 3, 2004